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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/574,406

05/19/2000

Daniel H. Greene

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7909

7590

03/26/2004

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EXAMINER

CHANG, JON CARLTON

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/574,406

Applicant(s)

GREENE ET AL.

Examiner

Jon Chang

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7-13 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 2-6 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Applicants' Amendment

1. The amendment filed September 25, 2000 has been entered and made of record. Claims 1-20 are pending.

Drawings

2. The drawings are objected to because Figure 13 includes the word "NEW" in it. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 8, 10, 11-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,748,807 to Lopresti et al. (hereinafter "Lopresti") and U.S. Patent 6,219,449 to Nagaishi.

Regarding claim 1, Lopresti discloses a method for decoding image data for a hardcopy document, comprising:

recording a scanned representation of the hardcopy document (column 7, lines 6-7) that includes a primary set of symbol data and a secondary set of encoding data (column 6, lines 41-58); the primary set of symbol data providing a first channel of human readable information rendered on the hardcopy document (column 6, lines 41-46); the secondary set of encoding data providing a second channel of machine readable information rendered on the hardcopy document (column 6, lines 51-58);

receiving a decoded form of the scanned representation of the hardcopy document from a decoding module to define a candidate set of symbol data (column 7, lines 11-13); and

rewriting, independent of the decoding module, the candidate set of symbol data using the secondary set of encoding data (column 7, lines 27-31; column 9, lines 29-33).

Lopresti does not disclose an event library identifying likely failures encountered when the scanned representation of the hardcopy document is decoded. However, this is well known in the art. For example, Nagaishi teaches as prior art a dictionary for recognition of characters which are likely to have recognition errors. Nagaishi's dictionary is an event library, the characters in the dictionary being the "events" and the dictionary being the "library". Nagaishi indicates that the dictionary provides the advantage of improving recognition (column 1, lines 29-30). Note further that Lopresti indicates that typical misinterpretation errors are taken into account (column 7, lines 65-67). Therefore, it would have been obvious to one of ordinary skill in the art to utilize an event library in Lopresti's method.

Claim 10 is drawn to an apparatus corresponding to the method of claim 1. A discussion similar to that presented above for claim 1 is applicable to claim 10. Claim 11 is similar to claim 10, except that it recites a scanner, instead of a means for recording. Lopresti discloses a scanner (Fig.1, element 16).

With regard to claims 8 and 19, Lopresti does not disclose that the secondary set of encoding data is encoded using one of separation coding, block coding, and convolution coding. The Examiner takes Official Notice that separation coding, block coding and convolution coding are well known in the art. Given that Lopresti indicates that the secondary encoding data can be a special font, bar code or other symbology (column 6, line 51-53), thereby leaving the actual coding technique to the skilled artisan, and given the fact that each type of coding being claimed is well developed in the art, each of the types of coding being claimed is seen as an art recognized equivalent to Lopresti's disclosure. Use of any of them would have been obvious to one of ordinary skill in the art.

With regard to claim 12, Lopresti discloses the apparatus according to claim 11, further comprising a module for decoding the secondary set of encoding data for use by the decoding module (column 8, lines 33-35).

Regarding claim 13, Lopresti discloses the apparatus according to claim 11, further comprising a module for decoding and decompressing the secondary set of encoding data for use by the decoding module (column 8, lines 33-35; since the encoding data can utilize a bar code, column 6, line 53, which is an inherently

compressed form of the data, upon decoding, the encoding data would also be decompressed).

5. Claims 7, 9, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lopresti, Nagaishi and U.S. Patent 5,594,809 to Kopec et al. (hereinafter "Kopec").

Regarding claims 7 and 18, Lopresti does not disclose that the decoding module performs dynamic programming to decode the scanned representation of the hardcopy document. However, Kopec discloses a decoder based on dynamic programming for decoding (column 44, lines 49-52). Kopec's dynamic programming possesses inherent advantages with regard to decoding. Given this, and Lopresti's suggestion of using dynamic programming (column 10, lines 26-27), it would therefore have been obvious to one of ordinary skill in the art to utilize a decoding module which performs dynamic programming in Lopresti's system.

Regarding claims 9 and 20, Lopresti does not disclose that the decoded form of the scanned representation includes certainty estimates of the candidate set of symbol data. However, this is well known in the art. Kopec teaches likelihood measurements for the decoded image (column 45, lines 27). This is, in essence, certainty estimates. In modifying Lopresti's system according to Kopec (note previous discussion), it would have been further obvious to one of ordinary skill in the art to employ certainty estimates because it would provide improved decoding.

Allowable Subject Matter

6. Claims 2-6 and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

References Cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,067,166 to Ito teaches dynamic programming matching using multiple templates for pattern recognition.

U.S. Patent 5,883,986 to Kopec et al. teaches a method and system for automatic transcription correction.

U.S. Patent 5,889,897 to Medina teaches ocr error checking through text image regeneration.


U.S. Patent 5,956,419 to Kopec et al. teaches unsupervised training of character templates using unsegmented samples.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (703)305-8439. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jon Chang
Primary Examiner
Art Unit 2623

Jon Chang
March 22, 2004